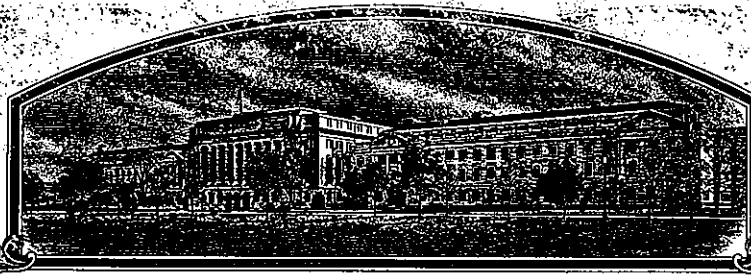


No.

200700405



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

U.S. Government, as represented by the
Secretary of Agriculture

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT; THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC DEPOSIT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE APPLICANT(S) SHALL EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED IN THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BARLEY

'RWA 1758'

In Testimony Whereof, I have hereunto set my hand
and caused the seal of the Plant Variety
Protection Office to be affixed at the City of
Washington, D.C. this twentieth day of
September, in the year two thousand and seven.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture



U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)


The Following statements are made in accordance with
the Privacy Act of 1974 (5 U.S.C. 552a) and the
Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued
(7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER The U. S. Government as represented by the Secretary of Agriculture		2. TEMPORARY DESIGNATION OR 01ST1758		3. VARIETY NAME RWA 1758	
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) 1400 Independence Ave., SW Washington D.C. 20250		5. TELEPHONE (include area code) (301) 504- 6905		FOR OFFICIAL USE ONLY PVPO NUMBER #200700405 FILING DATE AUGUST 9, 2007	
6. FAX (include area code) (301)504-5060		7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) U.S. Government		8. IF INCORPORATED, GIVE STATE OF INCORPORATION N/A	
9. DATE OF INCORPORATION N/A		10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers)			
Phil Bregitzer USDA, ARS, PWA 1691 S. 2700 W. Aberdeen, ID 83210		Richard J. Brenner USDA, ARS, OTT 5601 Sunnyside Ave. Beltsville, MD 20705-5131		FILING AND EXAMINATION FEES: F E E S R E C E I V E D \$ 4,382.00 DATE 8/6/07 CERTIFICATION FEE: \$ 768.00 DATE 9/7/07	
11. TELEPHONE (include area code) 208-397-4162		12. FAX (include area code) 208-397-4165		13. E-MAIL pbregit@uidaho.edu	
14. CROP KIND (Common Name) Barley		15. FAMILY NAME (Botanical) Poaceae		16. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) 0 YES X NO IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION.	
17. GENUS AND SPECIES NAME OF CROP Hordeum vulgare		18. IS THE VARIETY A FIRST GENERATION HYBRID? 0 YES X NO		19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse) X Exhibit A. Origin and Breeding History of the Variety X Exhibit B. Statement of Distinctness X Exhibit C. Objective Description of Variety Exhibit D. Additional Description of the Variety (Optional) X Exhibit E. Statement of the Basis of the Owner(s) Ownership X Exhibit F. Declaration Regarding Deposit X Voucher Sample (3,000 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) X Filing and Examination Fee (\$4,382), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)	
20. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? 0 YES X NO IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? 0 YES 0 NO IF YES, WHICH CLASSES? 0 FOUNDATION 0 REGISTERED 0 CERTIFIED 22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? 0 YES 0 NO IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. 0 FOUNDATION 0 REGISTERED 0 CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse.)			
23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? 0 YES X NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)		24. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act) 0 YES (If "yes", answer items 21 and 22 below) X NO (If "no", go to item 23)			

25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER 		SIGNATURE OF OWNER	
NAME (Please print or type) Richard J. Brenner		NAME (Please print or type)	
CAPACITY OR TITLE Assistant Administrator, ARS	DATE 8/1/07	CAPACITY OR TITLE Research Geneticist	DATE

GENERAL INSTRUCTIONS: To be effectively filed with the Plant Variety Protection Office (PVPO), ALL of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E, F; (3) for a tuber reproduced variety, verification that a viable (*in the sense that it will reproduce an entire plant*) tissue culture will be deposited and maintained in an approved public repository; and (4) payment by credit card or check drawn on a U.S. bank for \$4,382 (\$518 filing fee and \$3,864 examination fee), payable to "Treasurer of the United States" (*See Section 97.6 of the Regulations and Rules of Practice*). **NEW:** With the application for a seed reproduced variety or by direct deposit soon after filing, the applicant must provide at least 3,000 viable untreated seeds of the variety *per se*, and for a hybrid variety at least 3,000 untreated seeds of each line necessary to reproduce the variety. Partial applications will be held in the PVPO for not more than 90 days; then returned to the applicant as un-filed. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. **Retain one COPY for your files.** All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a payment by credit card or check payable to "Treasurer of the United States" in the amount of \$768 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. The fees for filing a change of address; owner's representative; ownership or assignment; or any modification of owner's name is specified in Section 97.175 of the regulations. (*See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.*)

Plant Variety Protection Office
Telephone: (301) 504-5518 FAX: (301) 504-5291
General E-mail: PVPOmail@usda.gov
Homepage: <http://www.ams.usda.gov/science/pvpo/PVPIndex.htm>

SPECIFIC INSTRUCTIONS:

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and provide evidence that the permanent name of the application variety (even if it is a parental, inbred line) has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: U.S. Department of Agriculture, Agricultural Marketing Service, Livestock and Seed Programs, Seed Regulatory and Testing Branch, 801 Summit Crossing Place, Suite C, Gastonia, North Carolina 28054-2193 Telephone: (704) 810-8870. <http://www.ams.usda.gov/lsg/seed.htm>.

ITEM 19a. Give:

- (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
- (2) the details of subsequent stages of selection and multiplication;
- (3) evidence of uniformity and stability; and
- (4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified

19b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:

- (1) identify these varieties and state all differences objectively;
- (2) attach replicated statistical data for characters expressed numerically and demonstrate that these are clear differences; and
- (3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.

19c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.

19d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.

19e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.

20. If "Yes" is specified (*seed of this variety be sold by variety name only, as a class of certified seed*), the applicant MAY NOT reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. (*See Regulations and Rules of Practice, Section 97.103*).

23. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.

24. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

22. CONTINUED FROM FRONT (*Please provide a statement as to the limitation and sequence of generations that may be certified.*)

23. CONTINUED FROM FRONT (*Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U. S. or other countries.*)

24. CONTINUED FROM FRONT (*Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).*)

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.4 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TOO).

To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S. w., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TOO). USDA is an equal opportunity provider and employer.

ST-470 (02-06) designed by the Plant Variety Protection Office using Word 2003.

Exhibit A: Origin and Breeding History, RWA 1758

RWA 1758 has the pedigree Baronesse*4/STARS 9577B. Baronesse is a two-rowed feed barley that is well-adapted to irrigated and rain-fed production areas in the western US. It was developed by Nordsaat in Germany and marketed in the US by WestBred, LLC, Bozeman, MT. Its pedigree is 'Mentor'/'Minerva'//Vada mutant/4/'Carlsberg'/'Union'/'Opavsky'/'Salle'3/'Ricardo'5/'Oriol'6153P40. STARS 9577B is a six-rowed spring Russian wheat aphid resistant (RWA) germplasm line developed and released by the USDA-ARS. STARS 9577B is resistant to the five RWA biotypes known to be present in the US. STARS 9577B was developed via selection from CIHO 4165, a landrace that was originally collected in Afghanistan. The main component of the resistance is tolerance, conferred by two dominant genes with recessive epistasis.

RWA 1758 was developed via the backcross method. Following the initial cross, each backcross population was produced by crossing approximately five BC_xF_1 plants to the recurrent parent and bulking the resulting $BC_{x+1}F_1$ seed, resulting in populations consisting of approximately 70-100 individuals which then used for further population development. Starting with the BC_1F_1 population, the resistant progeny used for the next cycle of backcrossing were identified based on seedling resistance to RWA infestation. This process was repeated through BC_3 . Multiple (approximately 12) resistant BC_3F_1 progeny were self-pollinated to produce a bulk BC_3F_2 population which was again screened for resistance. Resistant BC_3F_2 plants were harvested and progeny tested to identify lines that were homozygous for RWA resistance. In some cases an additional generation of seed increase was conducted to provide sufficient seed for further testing. Remnant seed from 123 $BC_3F_{2,3}$ or $BC_3F_{2,4}$ lines from putatively homozygous BC_3F_2 plants were planted as rows in the field for agronomic observation. Eighteen progeny rows were selected for further testing, harvested, and entered into preliminary yield trials. Final selection of RWA 1758 was based on favorable characteristics for yield, test weight, kernel plumpness, maturity characteristics, and resistance to lodging. Further seedling assays were conducted to confirm homozygosity for RWA resistance.

Breeder's seed of RWA 1758 was produced from approximately 348 $F_{7,8}$ headrows that were uniform in appearance and which were shown to be uniform for RWA resistance.

RWA 1758 has been observed for six generations of reproduction and during the seed increase period and is stable and uniform. No variants were observed.

RWA 1758 was developed by three backcrosses to the variety Baronesse. RWA 1758 is most similar to the variety Baronesse, similar enough that it can be indistinguishable from Baronesse based on observations of morphological characteristics. It can be distinguished from most other varieties--including the RWA-resistant varieties Burton, Stoneham, and Sidney--based on the absence of lateral florets, a characteristic feature inherited from the parent Baronesse. It can be distinguished from Baronesse primarily based on its resistance to damage caused by Russian wheat aphid (RWA) feeding.

RWA infestation of Baronesse, particularly when the infestation takes place on young plants or seedlings, causes easily observable chlorotic or white longitudinal stripes to appear on the leaves, and the leaves will become rolled and will trap the developing head and prevent or impede the normal exertion of the head from the leaves and ultimately impair normal grain yields. RWA 1758 contains two dominant genes with recessive epistasis derived from the line STARS-9577B; whereas 'Baronesse' does not have the RWA resistance derived from STARS-9577B. These genes have not yet been assigned locus designations (Mornhinweg *et al.* 2002). Infestation of RWA 1758 with RWAs at any stage will not result in rolling or streaking of leaves, although some slightly chlorotic spots may appear on the leaves. Head entrapment and consequent yield losses will not occur. These differences are qualitative and easily observable when infestations are sufficient to result in damage to susceptible varieties (Figures 1, 2). In four separate greenhouse assays of seedling reactions to RWA infestation conducted in Stillwater, OK, by ARS entomologists, RWA 1758 was qualitatively more resistant to RWA damage than the susceptible control, Morex (Table 1). On a scale of 1 (no damage) to 9 (seedling death), RWA 1758 routinely is scored as "3", which is considered a resistant reaction and requires that the plants do not show leaf striping or rolling. Morex plants were routinely scored as "9". Intermediate scores, which could complicate distinguishing RWA 1758 from susceptible varieties, have never been observed in tests of RWA 1758.

Table 1. Damage scores of 30 seedlings infested at emergence with Russian wheat aphids, based on a 1-9 scale where 1 = no damage and 9 = plant death. Tests were terminated following scoring, with no harvest of tested plants. All tests were conducted in USDA-ARS greenhouses in Stillwater, OK.

	Planting date;scoring date			
	<u>12/3/01; 1/4/02</u>	<u>11/5/02;12/13/02</u>	<u>12/16/03;1/19/04</u>	<u>1/5/06;2/10/06</u>
RWA 1758	3 (range 3-4)	3 (range 3-4)	3 (range 3-4)	3 (range 3-4)
Morex	9 (range 8-9)	9 (range 8-9)	9 (range 8-9)	9 (range 8-9)

Mornhinweg, D.W., D.R. Porter, and J.A. Webster. 2002. Inheritance of Russian wheat aphid resistance in Spring barley germplasm line STARS-9577B. *Crop Science*. 42(6):1891-1893.

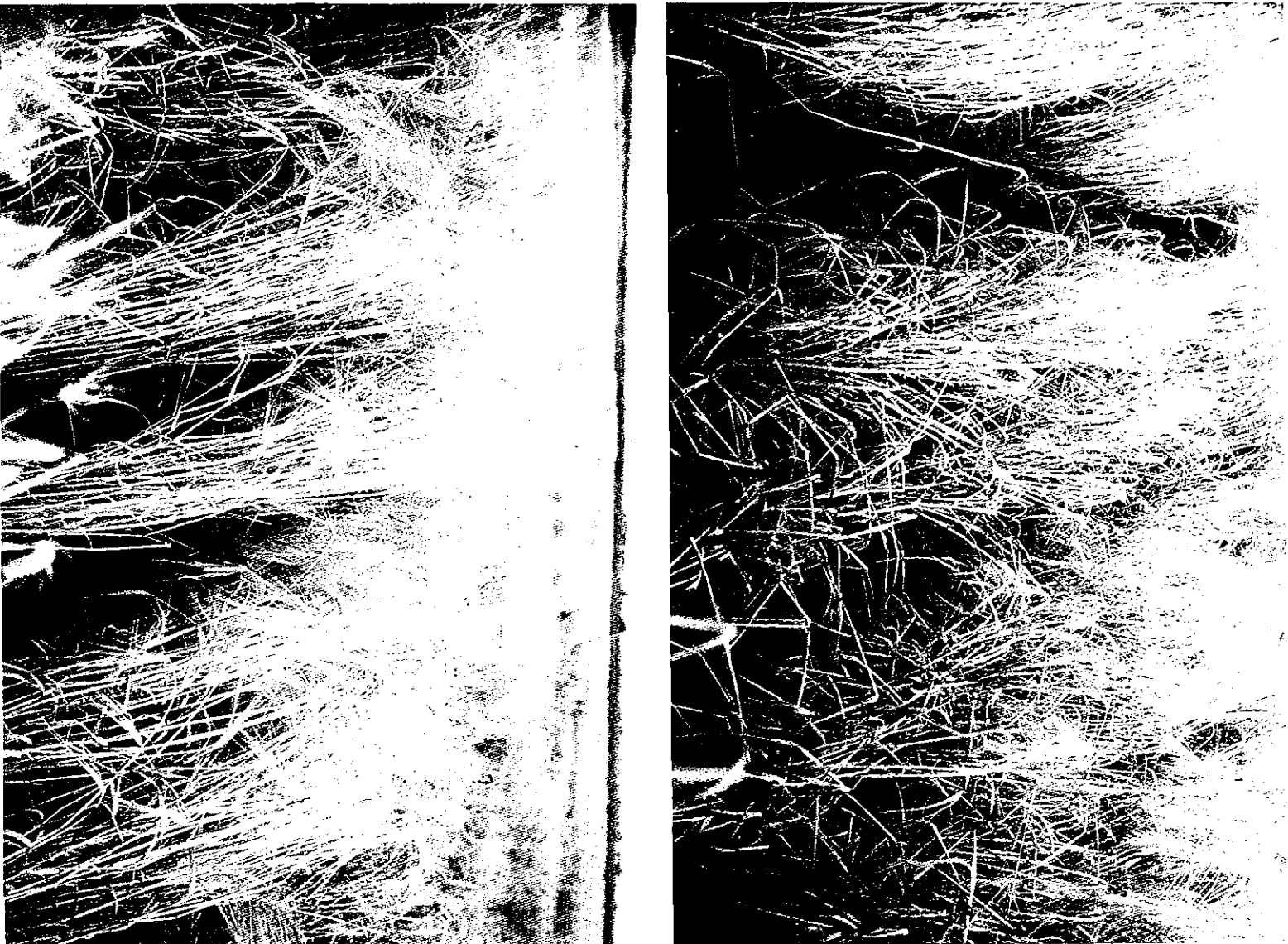


Figure 2. Effects of Russian wheat aphid feeding on susceptible (top) and resistant (bottom) barley plants that were infested as seedlings at approximately the five leaf stage. Note the lack of normal head exertion in the susceptible plants.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 1.5 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotope, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

OBJECTIVE DESCRIPTION OF VARIETY
Barley (*Hordeum vulgare* L.)

NAME OF APPLICANT (S) Phil Bregitzer/Richard J. Brenner	TEMPORARY OR EXPERIMENTAL DESIGNATION 01ST 1758	VARIETY NAME RWA 1758
ADDRESS (Street and No. or RD No., City, State, Zip Code, and Country) USDA-ARS 1691 S. 2700 W. Aberdeen, ID 83210 USA		<div style="background-color: black; color: white; text-align: center; padding: 2px;">NOT FOR OFFICIAL USE ONLY</div> <div style="text-align: center;">PVPO NUMBER #200700405</div>

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (i.e. 0 9 9 or 0 9) when the number is either 99 or less or 9 or less.

1. GROWTH HABIT:

1 1 = Spring 2 = Facultative Winter 3 = Winter Early Growth: 3 1 = Prostrate 2 = Semi-Prostrate 3 = Erect

2. MATURITY: (50% Flowering)

2 1 = Early (California Mariout) 2 = Mid-Season (Betzes) 3 = Late (Frontier)

 No. Days Earlier Than _____ *

Same as Check Baronesse *

0 0 1 No. of Days Later Than Harrington *

3. PLANT: (From Soil Level to Top of Head)

3 1 = Semi-Dwarf 2 = Short (California Mariout) 3 = Medium Tall (Betzes) 4 = Tall (Conquest)

5 cm Shorter Than Baronesse *

Same as Check _____ *

 cm Taller Than _____ *

4. STEM:

2 Exsertion (Flag to Spike at Maturity): 1 = (0 - 3 cm) 2 = (3 - 10 cm) 3 = (10 - 15 cm)

1 Anthocyanin: 1 = Absent 2 = Present

0 5 No. of Nodes (Originating from Node Above Ground)

2 Collar Shape: 1 = Closed 2 = V-Shaped 3 = Open 4 = Modified Closed or Open

2 Shape of Neck: 1 = Straight 2 = Snaky 3 = Other (Specify) _____

* A commercial variety grown in the same trial.

5. LEAF:

1 Basal Leaf Sheath (Seedling): 1 = Glabrous 2 = Pubescent
 2 Position of Flag Leaf (At Boot Stage): 1 = Drooping 2 = Upright
 2 Waxiness: 1 = Absent (Glossy) 2 = Slightly Waxy 3 = Waxy
 18 mm Width (First Leaf Below Flag Leaf)
 25 cm Length (First Leaf Below Flag Leaf)
 1 Anthocyanin in Leaf Sheath: 1 = Absent 2 = Present

6. HEAD:

1 Type: 1 = Two-Rowed 2 = Six-Rowed
 1 Density: 1 = Lax 2 = Erect (Not Dense) 3 = Erect (Dense) 4 = Other (Specify) _____
 2 Shape: 1 = Tapering 2 Strap 3 = Clavate 4 = Other (Specify) _____
 2 Waxiness 1 = Absent (Glossy) 2 = Slightly Waxy 3 = Waxy
 1 Lateral Kernels Overlap: 1 = None 2 = At Tip 3 = 1/4 - 1/2 of Head
 3 Rachis (Hair on Edge): 1 = Lacking 2 = Few 3 = Covered

7. GLUME:

2 Length: 1 = 1/3 of Lemma 2 = 1/2 of Lemma 3 = More than 1/2 of Lemma
 3 Hairs: 1 = None 2 = Short 3 = Long
 3 Hair Covering: 1 = None 2 = Restricted to Middle 3 = Confined to Band 4 = Completely Covered
 2 Awns: 1 = Less than Equal to Length of Glumes 2 = Equal to Length of Glumes 3 = More than Equal to Length of Glumes
 3 Awn Surface: 1 = Smooth 2 = Semi-Smooth 3 = Rough

8. LEMMA:

5 Awn: 1 = Awnless
 2 = Awnlets on Central Rows, Awnless on Lateral Rows
 3 = Short on Central Rows, Awnlets on Lateral Rows
 4 = Short (Less than Equal to Length of Spike)
 5 = Long (Longer than Spike)
 6 = Hooded
 4 Awn Surface: 1 = Awnless 2 = Smooth 3 = Semi-Smooth 4 = Rough
 1 Teeth: 1 = Absent 2 = Few 3 = Numerous
 1 Hair: 1 = Absent 2 = Present
 2 Shape of Base: 1 = Depression 2 = Slight Crease 3 = Transverse Crease
 2 Rachilla Hairs: 1 = Short 2 = Long

9. STIGMA:

2 Hairs: 1 = Few 2 = Many

10. SEED:

Type: 1 = Naked 2 = Covered

Hairs on Ventral Furrow: 1 = Absent 2 = Present

Length: 1 = Short (8.0 mm)
2 = Short to Mid-Long (7.5 – 9.0 mm)
3 = Mid-Long (8.5 – 9.5 mm)
4 = Mid-Long to Long (9.0 – 10.5 mm)
5 = Long (10.0 mm)

Wrinkling of Hull: 1 = Naked 2 = Slightly Wrinkled 3 = Semi-Wrinkled 4 = Wrinkled

Aleurone Color: 1 = Colorless (White or Yellow) 2 = Blue

Percent Abortive GMS. per 1000 Seeds

11. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant, 3 = Intermediate, 4 = Tolerant)

Septoria

Net Blotch

Spot Blotch

Powdery Mildew

Loose Smut

Bacterial Blight

Covered Smut

False Loose Smut

Stem Rust

Leaf Rust

Scab

Scald

Aster Yellows Virus

BSMV

BYDV

Other (Specify) _____

12. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant, 3 = Intermediate, 4 = Tolerant)

Green Bug

English Grain Aphid

Chinch Bug

Armyworm

Grasshoppers

Cerial Leaf Beetle

Other (Specify) Russian wheat aphid

Hessian Fly Races {

GP

A

B

C

Other (Specify) _____

D

E

F

G

13. CHEMICAL: (0 = Not Tested, 1 = Susceptible, 2 = Resistant, 3 = Intermediate, 4 = Tolerant)

DDT

Other (Specify) _____

14. INDICATE WHICH VAREITY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Tillering	<u>Baronesse</u>	Seed Size	<u>Baronesse</u>
Leaf Size	<u>Baronesse</u>	Coleoptile Elongation	<u>Baronesse</u>
Leaf Color	<u>Baronesse</u>	Seedling Pigmentation	<u>Baronesse</u>
Leaf Carriage	<u>Baronesse</u>		

REFERENCES:

The following publications may be used as a reference aid for the standardization of character descriptions and terms used in this form:

1. Wiebe, G.A., and D.A. Reid, 1961, Classifications of Barley Varieties Grown in the United States and Canada in 1958, Technical Bulletin No. 1224, U.S. Department of Agriculture.
2. Reid, D.A., and G.A. Wiebe, 1968, Barley: Origin, Botany, Culture, Winter Hardiness, Genetics, Utilization, Pests, Agriculture Handbook No. 338, U.S. Department of Agriculture, pp. 61-84.
3. Malting Barley Improvement Association, Milwaukee, Wisconsin, 1971, Barley Variety Dictionary.

COLOR: Nickerson's or any recognized color fan may be used to determine color of the described variety.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

1. NAME OF APPLICANT(S) U. S. Government as represented by the Secretary of Agriculture	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER 01ST1758	3. VARIETY NAME RWA 1758
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) 1400 Independence Ave., SW Washington D.C. 20205	5. TELEPHONE (include area code) (301) 504-6905	6. FAX (include area code) (301) 504-5060
7. PVPO NUMBER		#200700405

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. If no, please explain.

X YES

NO

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? If no, give name of country.

X YES

NO

10. Is the applicant the original owner?

X YES

NO

If no, please answer one of the following:

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?

YES

NO

If no, give name of country

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?

YES

NO

If no, give name of country

11. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

"This Variety is owned by USDA/ARS"

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41 (a)(2) of the Plant Variety Protection Act for definitions.

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 0.1 hour per response, including the time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs, is and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-1N, Whitten Building, 14th and Independence Avenue, SW, Washington, D.C. 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

EXHIBIT F
DECLARATION REGARDING DEPOSIT

NAME OF OWNER (S) The U.S. Government as represented by the Secretary of Agriculture	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) 1400 Independence Ave., SW Washington D.C. 20250	TEMPORARY OR EXPERIMENTAL DESIGNATION 01ST1758 VARIETY NAME RWA 1758
NAME OF OWNER REPRESENTATIVE (S) Phil Bregitzer	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) USDA, ARS, PWA 1691 S. 2700 W. Aberdeen, ID 83210 USA	FOR OFFICIAL USE ONLY PVPO NUMBER #200700405

I do hereby declare that during the life of the certificate a viable sample of propagating material of the subject variety will be deposited, and replenished as needed periodically, in a public repository in the United States in accordance with the regulations established by the Plant Variety Protection Office.

Signature Phil Bregitzer Date 8/3/07